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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,984	08/16/2004	Shekhar Bhansali	1372.187.PRC	9395

21901 7590 10/06/2005

SMITH & HOPEN PA  
15950 BAY VISTA DRIVE  
SUITE 220  
CLEARWATER, FL 33760

EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/710,984

Applicant(s)

BHANSALI ET AL.

Examiner

Anita K. Alanko

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/16/04 filing of application.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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***Claim Objections***

Claims 2-3 are objected to because of the following informalities: they appear to be part of claim 1. For the purposes of the rejection claims 1-3 are considered all to be part of claim 1. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 9, 11-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ishida et al (US 5,830,777).

Ishida discloses a method comprising the steps of:

providing a silicon wafer 2; diffusing the wafer with dopant 23, whereby the diffusion creates a PN-junction throughout the surface of the wafer (Fig.7);

providing a mask 25; positioning the mask 25 in overlying relation to the surface of the wafer; etching the wafer to create recessed areas coincident with the patterned oxide (Fig.10), the recessed areas characterized by the absence of surface PN-junction (since they are removed); hydrofluoric acid etching the wafer to form porous silicon 24 thereon, whereby the porous silicon is formed coincident with the surface area characterized by the absence of surface PN-junction; subjecting the wafer surface to wet etching resulting in dissolution of the porous silicon (Fig.10).

Note that the claims are not limited to a particular order of steps.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 10, 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al (US 5,830,777).

The discussion of Ishida from above is repeated here.

As to claim 8, Ishida does not disclose how the oxide layer is formed. It would have been obvious to one with ordinary skill in the art to deposit the oxide by sputtering because it is a conventional, useful technique for oxide deposition.

As to claims 10 and 13-14, Ishida does not disclose how long the etching is conducted. The time depends on the desired effect- how much material is to be removed, how fast it should be removed, the temperature of the etchant. For example, the temperature of the etchant effects how quickly the etching is conducted. It would have been obvious to one with ordinary skill in the art to use the cited time in the method of Ishida because the time appears to reflect a result-effective variable which can be optimized. See MPEP 2144.05 IIB.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art shows methods of etching porous silicon.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 2:30 pm (Wed until 11:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Anita K. Alanko*  
Anita K Alanko  
Primary Examiner  
Art Unit 1765